

1 **I CLAIM:**

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3 1. A light provider for an umbrella and
4 stand assembly, comprising in combination:

5 a) a body releasably attachable to the
6 assembly,

7 b) a source or sources of electric light
8 carried by the body, to direct said light away from the
9 body,

10 c) and incident light responsive means on
11 the body to provide electrical energization for said
12 light source, said means configured to receive incident
13 light from a direction or directions spaced away from
14 light directed from said source or sources.

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17 2. The combination of claim 1 wherein said
18 body includes multiple sections that become
19 interconnected when said body is attached to the
20 assembly stand.

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1 3. The combination of claim 2 wherein at
2 least two of said sections have hinged interconnection,
3 whereby said sections are clampingly connected to the
4 stand.

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7 4. The combination of claim 1 wherein said
8 body has upper and lower sides, said means is located
9 to face away from one of said sides, and said source of
10 electric light is located to face away from the other
11 of said sides.

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14 5. The combination of claim 4 wherein said
15 means comprise a solar cell or cells, and said light
16 source or sources comprise an LED or LEDs.

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19 6. The combination of claim 4 wherein said
20 one side is generally convex in one direction away from
21 the body, and said other side is generally convex in an
22 opposite direction away from the body.

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1 7. The combination of claim 1 wherein said
2 body defines a through opening to receive the assembly
3 stand.

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6 8. The combination of claim 7 wherein said
7 opening has at least two selectable sizes to receive
8 stands of different diameters.

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11 9. The combination of claim 7 wherein said
12 means comprise solar cells spaced about said through
13 opening, and said light sources comprise LEDs spaced
14 about said central opening, in light concentrating
15 clusters, each cluster received in a light reflecting
16 receptacle.

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19 10. The combination of claim 1 including a
20 control to control the intensity and/or color of light
21 emission from said source or sources.

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24 11. The combination of claim 5 including a
25 control or controls to control the intensity and/or
26 color of light emission from said LED or LEDs.

1 12. The combination of claim 7 including a
2 stand gripper or grippers at said opening and carried
3 by the body.

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6 13. The combination of claim 12 wherein the
7 body includes two sections respectively carrying said
8 grippers, there being a spring or springs urging at
9 least one gripper relatively toward another gripper.

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12 14. The combination of claim 3 including
13 latch elements carried by said body sections to latch
14 together when the sections are closed about an umbrella
15 stand.

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18 15. The combination of claim 14 including a
19 latch release on at least one of the sections and
20 movable to unlatch said latch elements, there being a
21 guide means to guide the sections when closed about the
22 stand.

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1 16. The method which includes:

2 x₁) providing a provider as defined in claim
3 1, said provider having multiple sides, said means is
4 located to face away from one of said sides, and said
5 source of electric light is located to face away from
6 another of said sides,

7 x₂) and selectively attaching the body to
8 the assembly stand to orient the light source or
9 sources to face upwardly toward the umbrella, or
10 downwardly away from the umbrella.

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13 17. A light provider for an umbrella and
14 stand assembly, comprising in combination:

15 a) a body attachable to the assembly,

16 b) a source or sources of electric light
17 carried by the body, to direct said light away from the
18 body,

19 c) and means on the body to provide
20 electrical energization for said light source,

21 d) and wherein a through opening is carried
22 by the body to receive the assembly stand.

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1 18. The combination of claim 17 wherein said
2 opening effectively has at least two selectable sizes
3 to receive stands of different diameters.

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6 19. The combination of claim 17 including a
7 stand gripper or grippers at said opening and carried
8 by the body.

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11 20. The combination of claim 19 wherein the
12 body includes two sections respectively carrying said
13 grippers, there being a spring or springs urging at
14 least one gripper relatively toward another gripper.

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17 21. The combination of claim 17 including a
18 control to control the intensity and/or color of light
19 emission from said source or sources.

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22 22. The combination of claim 19 including
23 means for adjusting the grip of said gripper or
24 grippers.

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1 23. The combination of claim 17, wherein the
2 body is axially domed to efficiently receive or
3 transmit light, angularly relative to a body axis.

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6 24. A lighting device suitable for fastening
7 to a pole-like object, comprising:

8 a) a base part,

9 b) and a light means,

10 c) wherein, the base part comprises a
11 divided first base part and a second base part, each
12 having an inner sidewall surface facing that of the
13 other in which a through hole is formed to
14 substantially encircle a pole-like object when said two
15 base parts are connected.

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18 25. The lighting device as claimed in claim
19 24 wherein the lighting device further comprises a
20 locking means to hold said first and second base parts
21 together.

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1 26. The lighting device as claimed in claim
2 25 wherein the locking means further comprises:

3 x_1 a gripping claw,
4 x_2 a sliding block,
5 x_3 a crank handle,
6 x_4 a plurality of threaded
7 pillar parts driving the sliding
8 block; and
9 x_5 a transmission part transmitting
10 longitudinal force to the sliding
11 block via rotation of the threaded
12 pillar parts; and wherein, the
13 gripping claw grips a pole-like
14 object adjusting the displacement
15 of the gripping claw protruding
16 towards said object.

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19 27. The lighting device as claimed in claim
20 24 wherein the lighting device further comprises and
21 carries a solar power charging part.

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1 28. The lighting device as claimed in claim
2 4, wherein the solar power charging part further
3 comprises:

4 x₁) a plurality of solar panels located
5 on the base part,
6 x₂) a plurality of wires,
7 x₃) a solar-charging circuit part,
8 x₄) wherein, each solar panel is
9 electrically connected in series to
10 the solar-charging circuit part in
11 the base part by means of said
12 wires.

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15 29. The lighting device as claimed in claim
16 25 wherein the base part is preferably of circular disk
17 shape, and further comprising:

18 x₁) a symmetrically divided first base
19 part and a second base part each
20 having a semi-circularly curved
21 inner sidewall surface facing that
22 of the other in which a circular
23 through hole is formed to
24 substantially encircle a pole-like
25 object when said two base parts are
26 locked together,

1 x₂) and a locking means to lock said
2 two base parts together.
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5 30. The lighting device as claimed in claim
6 24, wherein the base part further comprises:

7 x₁) a hinge part, and
8 x₂) a holding part,
9 x₃) wherein the first and second base
10 parts are held together by means of
11 a hinge part along a corner edge of
12 each of said first and second base
13 parts while the other corner edges
14 are coupled together by means of
15 the separable holding parts, for
16 ease of connecting and dis-
17 connecting.
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19 31. The lighting device as claimed in claim
20 26, wherein the transmission part further comprises:

21 i) gear mounting part,
22 ii) a first gear,
23 iii) a pair of second gears relatively
24 smaller than the first gear, both
25 engaging the first gear, and
26 iv) an axle part,

1 v) wherein, the gear mounting part is
2 fixed to the base part, and the
3 first gear is rotatably fixed to
4 the gear mounting part by means of
5 an axle part while the second gears
6 drive the threaded pillar part or
7 parts.

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10 32. The lighting device as claimed in claim
11 26 wherein the sliding block and the gripping claw are
12 both of generally rectangular shape.

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15 33. The lighting device as claimed in claim
16 3 wherein the base part further comprises:
17 i) a longitudinal extending protruding
18 strip formed on each side wall of
19 the sliding block; and
20 ii) a corresponding longitudinal
21 extending recessing strip formed on
22 each side wall of a recess in the
23 base part slidably receives the
24 longitudinal extending protruding
25 strip on the sliding block.

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1 34. The lighting device as claimed in claim
2 24, wherein the light means, comprises at least one of
3 the following:

- 4 i) LED lamps, and
5 ii) a rechargeable battery supplying
6 electricity to the LED lamps.

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